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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,969	03/07/2005	Guobiao Zhang	P70465US0	7961

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EXAMINER
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LUKS, JEREMY AUSTIN

ART UNIT	PAPER NUMBER
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2837

MAIL DATE	DELIVERY MODE
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10/10/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/526,969

Applicant(s)

ZHANG, GUOBIAO

Examiner

Jeremy Luks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over New (733,330) in view of (Schumacher 2002/0175022 will be used as a translation and will be referred to as Schumacher herein). New teaches a muffler (Figure 1) comprising a casing within which are a gas inlet (A), a gas chamber (B) and a gas outlet (D), characterized in that a throttle-like device (H, C') is located in a gas flow route and controlled by self-energy of the gas flow (Page 1, Lines 90-104) (which includes an element of pressure when impinging upon member #G), wherein a cross sectional area of the gas flow of the throttle-like device (H, C') reduces when energy or pressure of the gas flow increases (Page 1, Lines 90-104); wherein the valves structure includes an adjusting device (F<sup>2</sup>) and an open and close throttle-like member (H) and a fixture (C'); and wherein the structure of the open and close member (H) is characterized in that a cross sectional area of its first surface (#H, upward facing surface) subjecting to gas pressure from the gas inlet (A) is larger than a cross sectional area of its second surface (#H, downward facing surface) that is opposite to the first surface (#H, upward facing surface) and exposes to the gas outlet (D). New fails to explicitly teach wherein the

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throttle-like device functions in a throttling manner in response to pressure of the gas flow, and wherein the throttle-like device (H, C') controlled by energy or a pressure component of gas flow (via contact with #G) is a pressure reducing valves structure. Schumacher teaches a throttling device (including closure member #14) functions in a throttling manner in response to pressure (P) (Page 3, [0057]-[0058]) of the gas flow (S), and wherein the throttle-like device (including closure member #14) controlled by energy or a pressure component (P) of gas flow (S) is a pressure reducing valves structure when used in combination. Further, with respect to the functionality of the muffler as a pressure reducer and being actuated by pressure, these limitations are a recitation in intended use of the device, and a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of New, with the apparatus of Schumacher to throttle the gases in order to provide sound dampening in response the pressure of the gas flow. Further, it would have been obvious to one of ordinary skill in the art to apply the technique of actuating a valve member via direct pressure on said valve member (New #H, H'; Schumacher #14) to improve New's method of actuating via gas speed impinging the funnel mouth (G), since allowing for a buildup of pressure will produce the predictable result of actuating the valve member in a smoother, less erratic manner

than, further dampening sound. *KSR International Co. v. Teleflex Inc.*, 82 USPQ 2d 1385 (2007).

2. Claims 4 and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over New (733,330) in view of (Schumacher 2002/0175022 will be used as a translation and will be referred to as Schumacher herein) as applied to claim 3, and further in view of Murray (3,219,144). New and Schumacher are relied upon for the reasons and disclosures set forth above. New further teaches an adjusting device comprising a spring ( $F^2$ ) and a connection lever (F) connected in series, and an open and close throttling member (H) and a fixture (C'); and wherein the structure of the open and close member (H) is characterized in that a cross sectional area of its first surface (#H, upward facing surface) subjecting to gas pressure from the gas inlet (A) is larger than a cross sectional area of its second surface (#H, downward facing surface) that is opposite to the first surface (#H, upward facing surface) and exposes to the gas outlet (D); wherein a spring chamber (housing enclosing spring  $F^2$ ) is connected with the gas chamber (B); and wherein the spring ( $F^2$ ) is located within the spring chamber (housing enclosing spring  $F^2$ ). New fails to teach adjusting device comprises a manual adjusting device and an energy sensor diaphragm, which are connected in series; wherein the connection lever of the adjusting device is connected with the second surface of the open and close member; wherein the spring and a part of the manual adjusting device are located within the spring chamber; wherein the spring chamber comprises a balancing hole communicating with the atmosphere; and wherein gas flow discharged from the gas outlet is continuous, stable and without pulsation. Schumacher further

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teaches an adjusting device comprising a spring (Figure 2, #12), an energy sensor member (19) and a connection lever (13), which are connected in series; wherein the connection lever (13) of the adjusting device is connected with the second surface of the open and close member (14) when used in combination; wherein a spring chamber or actuator 16) comprises a balancing hole communicating with the atmosphere (Page 3, [0060]); and wherein gas flow discharged from the gas outlet is continuous, stable and without pulsation. The Examiner considers this to be inherent, as the gradual pressure build up will not produce sudden movements of the throttling element. Further, when considering the annular throughflow space provided in Figure 2 (Page 3, [0054]), it is reasonable to one of ordinary skill that there will a constant flow of at least a portion of gas constantly flowing through the valve member, satisfying this limitation. It would also have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of New, with the apparatus of Schumacher to provide an adjusting device in communication with engine operating conditions that is controlled by the engine operating conditions by way of a pressure sensing diaphragm, improving New's teaching of varying the spring strength to control the valve (New, Page 2, Lines 13-17). Murray teaches a manual-adjusting device (Figure 1, #16) (Col. 1, Line 70 – Col. 2, Line 3), wherein a spring (4) and a part of the manual adjusting device (16) are located within the spring chamber (tube #1 could be a spring chamber). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of New as modified, with the apparatus of Murray to adjust the tension of the spring.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection. The Examiner considers the obvious combination of New, Schumacher and Murray to teach all of the limitations as claimed by Applicant.

4. In response to applicant's argument that certain elements of New and Schumacher are not used in the same way as Applicant's device (i.e. throttling device and other elements), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

5. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., peaks of gas flow wave – See Arguments, Page 6, paragraph 3) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Further, these arguments are also based on functionality of the device.

6. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

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where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, all three inventions are in the same field of endeavor, and the Examiner has provided clear and concise motivation for a proper combination of the cited references in the rejection above.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent arts of record relating to mufflers are disclosed in the PTO-892.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy Luks   
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Art Unit 2837  
Class 181

  
LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER